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dinate beds, occupies almost the whole of Columbia, Rensselaer, and Washington Counties, and is of immense thickness." He describes it "from Lansingburgh to the Sparry limestone on the east" as having a breadth of at least twenty miles, and, while signaling repetitions in the section, still supposes that its volume "exceeds that of all the members of the New York system put together," adding that, "without doubt, this immense rock admits of subdivision." He declares that in the breadth of fifteen or twenty miles across this belt "the observer will pass several times over the same beds, which are brought to the surface by successive uplifts."

The nature of the uplifts by which these subdivisions of the Taconic slate group are thus repeated is further shown by an ideal section, afterwards published in his "American Geology," ii. 48. The real order of succession, as then defined, was, at the base, greenish, chloritic-looking sandstones, followed, upwards, by a great variety of different colored slates, sandstones, and conglomerates, including, moreover, what is designated as sparry limestone, black shaly limestone, and, at the summit, fine black slates.

(To be continued.)

HISTORY OF GARDEN VEGETABLES.

BY E. LEWIS STURTEVANT, A.M., M.D.¹

(Continued from page 59.)

ARACACHA. *Aracacha esculenta* De C.

THIS South American plant is yet included among garden vegetables by Vilmorin. It was introduced to notice in Europe in 1829 and again in 1846, but trials in England, France, and Switzerland were unsuccessful² in obtaining eatable roots.³ It was grown near New York in 1825,⁴ and at Baltimore in 1828 or 1829,⁵ but was found to be worthless. Lately introduced to India, it is now fairly established there, and Mr. Morris⁶ considers it a most valuable plant-food, becoming more palatable and de-

¹ Director of the New York Agricultural Experiment Station, Geneva.

² Heuze, *Les Pl. Alim.*, ii. 509.

³ Decaisne & Naudin, *Man.*, iv. 137.

⁵ Farmers' Library, 1847, 94.

⁴ N. Eng. Farmer, July 22, 1825.

⁶ Gard. Chron., July 10, 1886, 50.

sirable the longer it is used. It is generally cultivated¹ in Venezuela, New Granada, and Ecuador, and in the temperate regions of these countries it is preferred to the potato. The first account which reached Europe concerning this plant was published in the "Annals of Botany," vol. i., about 1805. It was, however, mentioned in a few words by Alcedo in his "Diccionario Geographico de las Indias Occidentales ó America," 1789.²

The synonymy has been given as below :

Aracacha xanthoriza. Banc. Koen. Ann., i. 400.

Conium aracacha. Hook, Exot. Fl. Bot., 152.

Aracacha esculenta. De C., Prod., iv. 244.

ARTICHOKE. *Cynara scolymus* Lin.

The artichoke, *Cynara scolymus* L., is supposed by authors to have originated from the cardoon, *Cynara cardunculus* L., and the cardoon is indigenous at Madeira, the Canaries, Morocco, the Iberian Peninsula, the south of France, Italy, Greece, and the islands of the Mediterranean. It has become naturalized on a vast scale in Buenos Ayres and Chili.³ It is now grown on a large scale in France and other portions of Europe for the flower-heads, the scales and buttons of which make a very palatable vegetable, and in America in private gardens.

The number of varieties of artichoke is extremely large, as through the cross-fertilization of the flowers the plants do not come true from seed, and hence desirable selections are propagated by dividing the stools, or from suckers. Vilmorin⁴ describes thirteen varieties as sufficiently prominent for notice.

Whether the artichoke was cultivated by the ancients is in dispute among commentators, and Targioni-Tozzetti,⁵ a most competent authority, says it was only known to the Romans in the shape of the cardoon, and that the first record of the artichoke cultivated for the sake of the receptacle of the flowers was at Naples in the beginning or the middle of the fifteenth century; it was thence carried to Florence in 1466, and at Vienna, Ermolao Barbaro, who died as late as 1493, only knew of a single plant grown as a novelty in a private garden, although it soon

¹ De Candolle, Orig. des Pl. Cult., 32.

² Don, Gard. Dict., iii. 378.

³ De Candolle, Orig. des Pl. Cult., 73.

⁴ Vilmorin, Les Pl. Pot., 1883, 14; The Veg. Gard., 1885, 3.

⁵ Targioni-Tozzetti, Hort. Trans., 1854, 143.

after became a staple article of food over a great part of the peninsula. It seems quite certain that no descriptions I can find in Dioscorides and Theophrastus among the Greeks, nor in Columella, Palladius, and Pliny among the Romans, but that can with better grace be referred to the cardoon than to the artichoke. To the writers of the sixteenth century the artichoke and its uses were well known. "Le Jardinier Solitaire," an anonymous work published in 1612, recommends three varieties for the garden.

The most prominent distinction between the plants, as grown in the garden, is the presence or absence of spines. Although J. Bauhin,¹ in 1651, says that seed from the same plant may produce both sorts, and I have verified the observation, yet I cannot but believe that this comes from the cross-fertilization between the kinds, and that this absence or presence of spines is a true distinction. Tragus describes both forms in 1552, as do the majority of succeeding writers.

The form of the heads form a second division, the conical-headed and the globe.

I. The *Conical-headed*. Of the varieties sufficiently described by Vilmorin, four belong to this class, and they are all spiny. This form seems to constitute the *French artichoke* of English writers. The following synonymy seems justifiable:

Scolymus. Trag., 1552, 866, *cum ic*.

Carduus, *vulgo Carciofi*. I. Matth., 1558, 322.

Carduus aculeatus. Cam. Epit., 1586, 438, *cum ic*.; Matth., ed. of 1598, 496, *cum ic*.

Thistle, or *Prickly Artichoke*. Lyte's Dod., 1586, 603.

Cinara sylvestris. Ger., 1597, 291, fig.

Carduus sive Scolymus sativus, spinosus. J. Bauhin, 1651, iii. 48, *cum ic*.

Artichokes, Violet. Quintyne, 1693, 187; 1704, 178.

Conical-headed Green French. Mawe, 1778.

French Artichoke. Mill. Dict., 1807; Am. Gard. Books, 1806, 1819, 1828, 1832, etc.

Vert de Provence. Vilm., 1883, 16.

De Roscoff. Vilm., l. c.

De Saint Laud oblong. Vilm., l. c.

Sucre de Genes. Vilm., l. c.

Etc.

¹ J. Bauhin, Hist., 1651, iii. 48.

II. The *Globular-headed*. To this form belong two of Vil-morin's varieties, and various other varieties as described by other parties. The synonymy which seems to apply is:

Scolymus. Fuch., 1542, 792, *cum ic.*

Cardui alterum genus. Tragus, 1552, 866.

Carduus, *vulgo Cariciofi*. II. Matth., 1558, 322.

Carduus non aculeatus. Cam. Epit., 1586, 437, *cum ic.*; Matth., 1598, 497, *cum ic.*

Right Artichoke. Lyte's Dod., 1586, 603.

Cinara maxima ex Anglia delata. Lob. *ic.*, 1591, ii. 3.

Cinara maxima alba. Gerarde, 1597, 991, fig.

Cinara maxima anglica. Gerarde, l. c.

Green or White. Quintyne, 1593, 187; 1704, 178.

Red. Quintyne, l. c.

Globular-headed Red Dutch. Mawe, 1778.

Globe Artichoke. Mill. Dict., 1807; Am. Gard. Books, 1806, 1819, 1828, etc.

Gros vert de Laon. Vilm. 1883.

Violet de Provence. Vilm., l. c.

Etc.

In growing five of Vilmorin's varieties from seed, variability was such that we had nearly as many varieties as plants, and among other sorts had one which in its head was precisely the *Cinara major Boloniensis* of the "Hortus Eystettensis,"¹ 1613; and another, which was the *Cinara seu Artischoche vulgatis*s. of the same.

The color of the heads also found mention in the early writers. In our first division, the French, the green is mentioned by Tragus in 1552, by Mawe in 1778, and by "Miller's Dictionary" in 1807; the purple by Quintyne in 1693. In the Globe class the white is named by Gerarde in 1597, and by Quintyne in 1693; and the Red by Gerarde in 1597, by Quintyne in 1693, and by Mawe in 1778; and Parkinson, in 1629, names the red and the white.

The so-called wild plants of the herbalists seem to offer like variations to those we have noted in the cultivated forms, but the difficulty of identification renders it inexpedient to state a fixed conclusion. The heads are certainly no larger now than they were two hundred and fifty years ago, for the "Hortus Eystetten-

¹ Hortus Eystet., 1713. Aut. ord., 4, fol. 5.

sis" figures one fifteen inches in diameter. The long period during which the larger part of the present varieties have been known seems to justify the belief that modern origination has not been frequent. "Le Jardinier Solitaire," 1612, describes early varieties,—le Blanc, le Rouge, and le Violet; Worlidge, in 1683, says there are several kinds, and he names the tender and the hardy sort. McMahan names the French and two varieties of the Globe in America in 1806; "L'Hort. Français," 1824, names the Blanc, Rouge, Violet, and the Gros vert de Laon; Petit, "Nouv. Dict. du Jard.," 1826, adds Sucre de Genes to the list; Noisette, in 1829, adds the Camus of Brittany.

The name given by Ruellius¹ to the artichoke in France, in 1536, is *articols*, from the Italian *articollos*. He says it comes from *arcocum* of the Ligurians, *cocali* signifying the cone of the pine. The Romans call it *carchiophos*, and the plant and the name came to France from Italy. The names I have seen assigned are in alphabetical order: Arabs, *kharchiof*, *hirshuf*,² *raxos*, *harxos*; ³ Berber, *taga*; ⁴ Egypt, *charsjuf*; ² Flanders, *artisjok*; ⁵ France, *carciophe*,⁶ *artichaut*; ³ Germany, *strobildorn*,⁷ *artischoke*; ⁵ Hindustanee, *kunjir*; ² Holland, *artisjok*; ⁵ India, *kunjeer*, *ateechuk*; ⁸ Italy, *carciofo*, *articiocca*,⁵ *archichiocco*; ⁶ Persia, *kunjir*; ² Portugal, *alcachofra*; ⁵ Spain, *alcachofa*,⁵ *cardo de conner*.⁹

ASPARAGUS. *Asparagus officinalis* L.

The cultivated asparagus seems to have been unknown to the Greeks of the time of Theophrastus and Dioscorides, and the word *asparagus* seems to have been used for the wild plant of another species. The Romans of the time of Cato, about 200 B.C., knew it well, and Cato's⁹ directions for culture would answer fairly well for the gardeners of to-day, except that he recommends starting with the seed of the wild plant, and this seems good evidence that the wild and the cultivated forms were then of the same type as they are to-day. Columella,¹⁰ in the first century, recommends transplanting the young roots from a seed-bed, and devotes quite a space to their after-treatment, and he offers

¹ Ruellius, De Stirp., 1536, 644.

³ Dalechamp, Hist., 1587, ii. 1436.

⁵ Vilmorin, Les Pl. Pot., 14.

⁷ Tragus, 1552, 866.

⁹ Cato, c. 161, c. 6.

² Birdwood, Veg. Prod. of Bomb., 165.

⁴ De Candolle, Orig. des Pl. Cult., 74.

⁶ Cast. Durante, 1617, 91.

⁸ Speede, Ind. Handb. of Gard., 164.

¹⁰ Columella, lib. xi. c. 3.

choice of cultivated seed or that from the wild plant, without indicating preference. Pliny,¹ who wrote also in the first century of our era, says that asparagus, of all the plants of the garden, receives the most praiseworthy care, and also praises the good quality of the kind that grows wild in the island of Nesidis, near the coast of Campania. In his praise of gardens² he says, "Silvestres fecerat natura corrudas, ut quisque demeteret passim; ecce altiles spectantur asparagi; et Ravenna ternos libris rependit." (Nature has made the asparagus wild, so that any one may gather as found. Behold, the highly-manured asparagus may be seen at Ravenna weighing three pounds.) This evidences the likeness remarked between the wild and the cultivated form, and the recognition of the change produced by culture. Palladius,³ an author of the third century, rather praises the sweetness of the wild form found growing among the rocks, and recommends the transplanting to such places otherwise worthless for agriculture, but he also gives full directions for garden culture with as much care as did Cato. Gesner⁴ quotes Pomponius, who lived in the second century, as saying that there are two kinds, the garden and the wild asparagus, and the wild asparagus the more pleasant to eat.

The word *Asparagus*, as used by the Romans, meant the cultivated form, the word *Corruda* the wild plant. The original meaning seems to have been a succulent shoot, for in this sense it was frequently used by the Greek writers. In the European languages we have the continuance of the word under various forms, as *Sperage* by Turner, 1538; *Asparagus* by Gerarde, 1597 and to date, as also *Sparrowgrass*. In Denmark, *Asparges*; in France, *Asperge* or *Esparge* in 1586; in Germany, *Epargen* in 1586, *Epargel* in 1807, and *Spargel* at the present time; in Greece, *Asparaggia*; in Holland, *Aspergie* in 1807, *Aspersie* now; in Italy, *Asparagus* in 1586, and *Sparagio* at present; in Portugal, *Espargo*; in Russia, *Sparsa* or *Sparsch*; in Spain, *Asparrago* and *Esparrago*; and in Sweden, *Sparis* or *Spargel*.⁵

In extra-European languages the following names appear: By the Moors, *halion* or *helium*, Cam. Epit., 1586; in Arabic, *yer-*

¹ Pliny, lib. xix. c. 42.

² Ib., c. 19.

³ Palladius, lib. iii. c. 24; lib. iv. c. 9.

⁴ Scriptorum Rei Rust., 1788, Lexicon, art. Asparagus.

⁵ See Miller's Dict., 1807; Camerarius, Epit., 1586; Vilmorin, Les Pl. Pot., 1883.

amya, *marchoobeh*; ¹ in India, *marchooba*, *nagdoon*, or *asfuraj*; ² Hindustanee, *hilyoon*, *nagdown*; ³ in Persian, *margeesh*; ⁴ in Japan, *kikak kosi*; ⁵ in the Mauritius, *asperge*.⁶

The expression of Parkinson, 1629, "a delectable sallet-herbe," implies the consideration in which for many centuries it has been held. Its culture in Italy was, as we have seen, quite general in ancient times. We have no records of its first appearance in the various countries of Europe, but it is mentioned in England by Turner in 1538, and as under cultivation by Gerarde in 1597. In France ⁵ it was well known in 1529. In America "*Sparagus*" is mentioned in Virginia in 1648,⁶ and in Alabama in 1775,⁷ and in 1785 Cutter mentions asparagus as if it was then a well-known vegetable in Massachusetts.

The wild plant is indigenous to Europe; as an escape from gardens it is often noted in America, not only in waste places on the coast, as Gray states, but also inland. There are no essential points of difference between the wild and cultivated forms; such as are noted between the escapes and the garden plants are only such as come from protected culture and rich soil; the figures in the ancient botanies do not indicate other variation than this, and the few varieties, so called, of our gardens have no especial importance, the differences being but in minor points, and but indicative of a careful selection and high culture, the ordinary variability of a variety furnishing plants which are propagated by division.

The point I wish to make regarding this vegetable is this, that although under high cultivation now for over two thousand years, under diverse climates and treatment, yet it has remained constant to type. The directions given by the Roman writers to plant the seed of the wild plant might be followed to-day with our escapes without detriment. It has given no variety types that have been recorded from the time of Cato up to this present year of grace. Where, then, is this boasted power of man by which he is supposed to modify our wild plants into improved types? It probably does not exist. The types of our cultivated plants have been apparently taken from nature, as produced by

¹ Birdwood, Veg. Prod. of Bomb., 187.

² Speede, Ind. Handb. of Gard., 1542, 160. ³ Thunberg, Japan, 139.

⁴ Bojer, Hort. Maur., 1837, 350.

⁵ Ruellius, Dioscorides, 1529, 124.

⁶ A Perfect Desc. of Va., 1649, 4.

⁷ Roman's Nat. Hist. of Fla., i. 115.

the slow process of natural selection, and the influence of selection and diverse cultivations has been but to secure variation within the type limits, and such variations are usually of the character which may be described as expansion under culture, or its opposite; as smoothness and regularity of form; as enhanced quality.

ASPARAGUS BEAN. *Dolichos sesquipedalis* L.

This bean was described by Linnæus¹ in 1763, and I find no record of an earlier notice. It reached England in 1781.² Linnæus gives its habitat as America, and Jacquin received it from the West Indies. Martens³ considers it as a synonyme of *Dolichos sinensis* L. Loureiro's description of *D. sinensis* certainly applies well to the asparagus bean, and Loureiro⁴ observes that he thinks the *D. sesquipedalis* of Linnæus the same. He refers to Rumphius's "Amboina," l. 9, c. 22, tab. 134, as representing his plant, and this work, published in 1750, antedates the description of Linnæus. I think this is probably an East Indian plant, introduced to the West Indies, but I am unable from my notes to present the varieties and the forms which have been included under *D. chinensis*.

The name of Asparagus bean comes from the use of the green pods as a vegetable, served as a string-bean, and a tender asparagus-like dish it is. The name at Naples of *Fagiolo e maccarone* conveys the same idea. The pods grow very long, oftentimes are two feet in length, and hence the name of *Yard-long* often used.

The *Asparagus* or *Yard-long* bean is mentioned for American gardens in 1828,⁵ and probably was introduced earlier. It is mentioned for French gardens under the name of *Haricot asperge* in 1829.⁶ There are no varieties known to our seedsmen, but Vilmorin offers one, the *Dolique de Cuba*.⁷

The names under which it is known are: in France, *dolique asperge*, *haricot asperge*; in Germany, *Americanische riesen-spar-gel Bohne*; in Holland, *Indianische boon*; in Italy, *fagiuolo spara-*

¹ Linnæus, Sp. 1763, 1019.

² Miller's Dict., 1807.

³ Martens, Die Gartenbohnen, 100.

⁴ Loureiro, Fl. Cochinch., 1790, 436.

⁵ Fessenden, New Am. Gard., 1828.

⁶ Noisette, Man. du Jard., 1829.

⁷ Thorburn's Seed Cat., 1828.

gio,¹ *fasoi longhi*, *fagiolo e maccarone* ;² at Cayenne, *pois rubran* ;³ at Barbadoes, *Halifax pea* ;³ at Jamaica, *asparagus bean* ;⁴ in Cochin China, *dau dau* and *tau co*.⁵

(To be continued.)

THE EAST GREENLANDERS.

BY JOHN MURDOCH.

THE veteran authority on the Eskimos, Dr. Rink, has recently published an able and interesting paper on this easternmost outpost of the great Eskimo race,⁶ in which he reviews the ethnological results of the late successful Danish expedition to East Greenland under Captain Holm, and draws important conclusions as to the original home of the Eskimos, and the probable course of the wanderings by which they have reached their present habitations.

In his opinion, the metropolis of the Eskimos is probably to be found in Alaska, and he finds a confirmation of this view in the fact that here the Eskimos are not confined to the coast, but spread inland along the rivers.

It is a fact, however, that the proportion of the Eskimos of Alaska who really dwell in the interior is very small indeed, being confined to the valleys of the Kuskokwim and the adjoining less important rivers, and to the three rivers emptying into Kotzebue Sound, while along the rest of the coast from Kadiak to Point Barrow they are as purely littoral—or “Orarian,” to adapt Mr. Dall’s term—as in Greenland or Labrador. Nevertheless, this scanty remnant may represent the original condition of the race.

He believes that the migrations of the race can be traced by the development of certain inventions as we pass along the shores of the continent from Alaska to Greenland. For instance, the kayak, which is probably, as he believes, derived from the open

¹ Vilmorin, *Les Pl. Pot.*, 280. ² Martens, l. c. ³ Schomburgkh, *Hist. of Barb.*

⁴ Macfadyen, *Jam.*, i. 288.

⁵ Loureiro, l. c.

⁶ *Die Ostgrönländer in ihrem Verhältnisse zu den übrigen Eskimostämmen.* Von H. Rink. *Deutsche geographische Blätter*, vol. ix. No. 3, 1886, pp. 228-239.